

# **Compatibility Determinations for Proposed Action**

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- G.1 Recreational Boating
- G.2 Recreational Fishing
- G.3 Waterfowl Hunting
- G.4 Environmental Education
- G.5 Wildlife Observation, Photography, and Interpretation
- G.6 Research
- G.7 Agriculture – Haying



## COMPATIBILITY DETERMINATION

*(August 2004)*

**Use:** Recreational Boating

**Refuge Name:** Nisqually National Wildlife Refuge, located in Thurston and Pierce counties, Washington.

**Establishing and Acquisition Authorities:** Nisqually National Wildlife Refuge (NWR) was established on January 22, 1974 with approval by the Migratory Bird Conservation Commission. Approximately 2,925 acres of the approved 3,936 acres have been acquired. Legal authorities used for establishment of the Refuge include: Migratory Bird Conservation Act, as amended (16 U.S.C. 715-715d, 715e, 715f - 715r); and Fish and Wildlife Act of 1956, as amended (16 U.S.C. 742a - 742j).

**Refuge Purposes:** Nisqually NWR purposes include:

...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds (16 U.S.C.-715d).

...for the development, advancement, management, conservation, and protection of fish and wildlife resources ...(16 U.S.C. 742f(a)(4).

... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ...16 U.S.C. 742f(b)(1).

**National Wildlife Refuge System Mission:** “To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd et seq.]).

**Description of Use:** Recreational boating use addressed in this compatibility determination includes motorboats and non-motorized boats, including kayaks and canoes, in all waters of the Refuge outside the Brown Farm Dike, including the Research Natural Area (RNA). It does not include personal watercraft (PWC) use. Motor boats include a variety of crafts powered by 2-cycle or 4-cycle engines. Although the Refuge does not closely monitor all boat use that occurs on Refuge waters, approximately 6,700 boats per year are estimated to use the Refuge based on various public use data (USFWS, unpubl. data). Current Thurston County regulations require a 5 mph speed limit for all watercraft within 200 feet of any shoreline. However, this speed limit of 5 mph is currently not enforced by the U.S. Fish and Wildlife Service (Service) and is minimally enforced by the State or County. Pierce County does not have a similar regulation.

The Comprehensive Conservation Plan (CCP) Proposed Action would continue to provide recreational boating opportunities with an emphasis on use supporting priority public uses, including wildlife observation/photography, interpretation, environmental education, waterfowl hunting, and fishing. New restrictions would be aimed at minimizing impacts to wildlife and habitat as well as conflicts with other users. These restrictions include a seasonal closure

(October 1-March 31) in the RNA and a 5 mph speed limit throughout Refuge waters, including portions of the Refuge in Pierce County. This would expand the current 5 mph speed limit within 200 feet of any shoreline (Thurston County regulations) to include all Refuge waters. The area within the Brown Farm Dike and any estuarine restoration area (formerly diked areas) will remain closed to boating. Commercial vendors that lead organized groups will be required to apply for a Refuge Special Use Permit for each trip. A new visitor contact station would be constructed at Luhr Beach if acquisition or development of a cooperative agreement is accomplished with the State.

**Uses within the Proposed Expansion Area:** Chapters 2 and 3 of the Final CCP/Environmental Impact Statement (EIS) for Nisqually NWR identify areas in which the Service would seek to acquire land from willing sellers outside of the current Refuge boundary (USFWS 2002). Motorized and non-motorized boating currently occurs in McAllister Creek and the Nisqually River, upstream from the current Refuge boundary, although use is limited, particularly in McAllister Creek, which becomes extremely narrow and shallow in this area. The proposed Refuge boating restrictions described above would be applied to any newly acquired lands or waters.

**Availability of Resources:** The following funding/annual costs would be required to administer and manage boating activities as described above:

	<b>One-time Costs</b>	<b>Recurring Costs</b>
Maintenance of Parking Area and Ramp (Luhr Beach Boat Ramp)		25K
Visitor Contact Station	15K	1K
Law Enforcement		20K
Survey and posting	15K	
Signs	4K	2K
Outreach, Education, and Monitoring		5K
Administration	<u>5K</u>	<u>5K</u>
 TOTAL	 \$39K	 \$58K

Additional funds would be required to construct, operate, and maintain visitor facilities and interpretive materials (see summary table above). Law enforcement staffing would also be needed. Funding would be sought through the Service budget process. Other sources will be sought through strengthened partnerships, grants, coordination with other law enforcement agencies, and additional Refuge operations funding to support a safe, quality public use program as described above.

**Anticipated Impacts of Use:** Nisqually NWR provides crucial foraging and resting habitat for wintering migratory birds, including waterfowl, shorebirds, seabirds, and other waterbirds. Recreational boating affects their use in Refuge waters (also see Chapter 4 in the Final CCP/EIS for Nisqually NWR). Boating activity, both motorized and non-motorized, can alter distribution, reduce use of particular habitats or entire areas by waterfowl and other birds, alter feeding behavior and nutritional status, and cause premature departure from areas (Knight and Cole 1995). More sensitive species may find it difficult to secure adequate food or loafing sites as their preferred habitat becomes fragmented and recreation-related disturbances increase (Skagen et al. 1991; Pfister et al. 1992). Motorized boats generally have more impact on wildlife than

non-motorized boats because motorboats produce a combination of movement and noise (Tuite et al. 1983, Knight and Cole 1995). For example, a significant decrease in the proportion of bald eagles feeding at a site was observed when motorized boating activity occurred within 200 meters of that area in the preceding 30 minutes (Skagen 1980). Motorized boats can also cover a larger area in a relatively short time, in comparison to non-motorized boats. Boating pressure on wintering waterfowl in Germany had reached such a high level that it was necessary to establish larger sanctuaries and implement a seasonal closure on water sports and angling (Bauer et al. 1992).

Even canoes and kayaks can cause significant disturbance effects based on their ability to penetrate into shallower areas of the marsh (Speight 1973, Knight and Cole 1995). In the Ozark National Scenic Riverway, green-backed heron activity declined on survey routes when canoes and boat use increased on the main river channel (Kaiser and Fritzell 1984). Canoes or slow-moving boats have also been observed to disturb nesting great blue herons (Vos et al. 1985). Huffman (1999) found that non-motorized boats within 30 meters of the shoreline in south San Diego Bay caused all wintering waterfowl to flush between the craft and shore. However, compared to motorboats, canoes and kayaks appear to have less disturbance effects on most wildlife species (Jahn and Hunt 1964, Huffman 1999, DeLong 2002).

In Denmark, fast-moving boats were observed to have the greatest impact on red-breasted merganser broods (Kahlert 1994). The presence of fast-moving boats also caused the most significant modifications to the amount of time animals spent feeding and resting. In England, an increased rate of disturbance from boats partly caused a decline in roosting numbers of shorebird species (Burton et al. 1996). In addition, boaters have been observed to cause massive flights of diving ducks on the Mississippi River (Thornburg 1973). Motorized boats within 100 meters of shore caused all wintering waterfowl and shorebirds to flush between the craft and shore in south San Diego Bay, regardless of speed (Huffman 1999). However, disturbance to birds in general was reduced when boats traveled at or below the 5 mph speed limit.

Impacts of boating can occur even at low densities, given their noise, speed, and ability to cover extensive areas in a short amount of time. The total number of boats and people can be an inappropriate measure of recreational intensity because the presence of a single boat might be just as disturbing as that of many (Tuite et al. 1983, Knight and Knight 1984). This is especially the case in the RNA and McAllister Creek, both areas with high waterfowl use. USFWS survey data show that the RNA provides important resting and feeding habitat for large numbers of wintering waterfowl, including many wigeon, the predominant waterfowl species on the Refuge. Typically, the largest waterfowl concentrations are found in the RNA during the winter months.

The habitat along McAllister Creek is a relatively narrow tidal system that receives high use by a variety of waterfowl, wading birds, other waterbirds, and raptors. Because boats in confined areas are generally closer to shorelines, waterbirds in tidal creeks and rivers may be exposed to more human activity than birds in other shoreline habitats (Bratton 1990). Even low levels of boating activity affect the duration and pattern of use by wildlife in this narrow system. In addition, disturbance to nesting birds is caused by boat activity. An active bald eagle nest is located along McAllister Creek. The nesting period identified in the Bald Eagle Recovery Plan identifies January 1 as the beginning of the nesting season when special protective measures should begin (USFWS 1986). A great blue heron nesting colony, located along McAllister Creek since the 1970s, has been declining for several years. Nesting great blue herons are sensitive to a variety of human disturbances. Great blue herons were one of the more sensitive

of 23 waterbird species, when measuring flush distances from motorized watercraft (Rodgers and Schwikert 2002). Washington State requires a minimum 300-m buffer zone to protect colonies from human disturbances (WDFW 2001). However, boating activity in McAllister Creek falls within this buffer zone. Boating activities may be one of the contributing factors affecting these nesting birds.

Motorized boats introduce noise and pollution, in the form of gas and oil in water, and particulates in the air in estuarine and riverine habitats at the Refuge. An EPA report indicates that two-stroke engines, found on many motorized boats, discharge as much as 25% of unspent oil and gas directly into the water. Increased speeds of two-stroke engines can result in greater discharge of unspent oil and gas. Hydrocarbons in gas and oil released from two-stroke engines float on the surface and settle within shallow estuarine habitats. Hydrocarbon pollution has been found to bioaccumulate within the complex food web, posing a serious threat to the marine environment (Tjarnlund et al. 1993). Hydrocarbons can also be transferred to eggs from the plumage of incubating birds. Extremely small amounts of petroleum hydrocarbons can be toxic to eggs and birds that may ingest these contaminants (Hoffman 1989).

**Anticipated Impacts of Uses within the Proposed Expansion Area:** The following conditions must be met before allowing existing uses to occur on an interim basis on newly acquired lands: (1) There is no indirect, direct, or cumulative threat anticipated to human health or safety; (2) There is no indirect, direct, or cumulative threat anticipated to natural or cultural resources; (3) The use is consistent with management of existing Nisqually NWR lands and would contribute to achieving Refuge goals. In particular, existing Refuge regulations would not be compromised; (4) The newly acquired lands represent a meaningful unit within which to manage the activity; and (5) There are no anticipated conflicts with priority public uses.

The only major waterways within the expansion area are McAllister Creek and the Nisqually River. If property is acquired that includes McAllister Creek or the Nisqually River, boating regulations described above would also apply to these areas. No waterways other than McAllister Creek and Nisqually River will be open to boating. Anticipated impacts would be similar to that described above.

**Public Review and Comment:** Public review and comments were solicited in conjunction with the Draft CCP/EIS for Nisqually NWR, released in December 2002. Few comments were received on the Compatibility Determinations. Also see the Summary of Changes document and Appendix M (Comments and Responses). No changes were necessary based on comments received.

**Determination:**

Use is Not Compatible

Use is Compatible with the Following Stipulations

**Stipulations necessary to ensure compatibility:** The following stipulations are required to ensure that motorized and non-motorized boating is compatible:

1. A 5 mph speed limit for all boats will be implemented throughout Refuge waters.
2. The RNA will be closed to boats from October 1 through March 31 to reduce disturbance to wintering waterfowl populations.
3. The estuarine restoration area currently within the Brown Farm Dike (699 acres) will be closed to boats year round to serve as a sanctuary area. No motorized or non-motorized boats will be allowed into this area, and all public access will occur on trails only.
4. Signs will be installed and maintained to mark closed areas, seasonal closures, and to indicate 5 mph speed limit regulations on the Refuge. The RNA boundary will be posted and signs will include seasonal closure dates.
5. Periodic law enforcement will help ensure compliance with speed limit regulations and area closures. Regulations will be described in brochures and posted at a new Visitor Contact Station at Luhr Beach. Coordination with other law enforcement agencies, including the State and County, will be strengthened. Motorboat operators are required to be in compliance with all applicable Refuge, U.S. Coast Guard, and State of Washington laws. Outreach and education efforts will address groups associated with boating in the south Sound.
6. The Service remains concerned about impacts to wildlife using McAllister Creek. Waterfowl and waterbird use, great blue heron, bald eagle, salt marsh habitat, and boat activity will be monitored in McAllister Creek to document impacts. This Compatibility Determination will be re-evaluated in 3 - 5 years or sooner to assess whether other protective measures should be implemented in McAllister Creek.
7. If property is acquired that includes McAllister Creek or the Nisqually River, boating regulations described above would also apply to these areas. No waterways other than McAllister Creek and Nisqually River in the expansion area would be open to boating.
8. Monitoring of boating activities and associated effects on waterfowl, waterbirds, and other migratory birds will be conducted. Monitoring data will be used by the Refuge Manager in the periodic re-evaluation of this Compatibility Determination.

**Justification:** Boating itself is not considered wildlife-dependent recreation, but many wildlife-dependent recreational activities (fishing, waterfowl hunting, environmental education,

interpretation, and wildlife observation/photography) are associated with boating. Providing opportunities for wildlife-dependent priority public uses would contribute toward fulfilling provisions under the National Wildlife Refuge System Administration Act as amended in 1997. Although boating has a potential to impact wetland wildlife, implementing the prescribed measures listed in the Stipulations section should reduce many of these impacts. It is anticipated that an adequate amount of estuary habitat would be available to the majority of waterfowl and other wetland birds because some high wildlife use areas will be closed to boating, and boating regulations would be maintained and enforced. Thus, it is anticipated that birds will find sufficient food resources and resting places such that their abundance and use of the Refuge will not be measurably lessened, the physiological condition and production of waterfowl and other waterbirds will not be impaired, their behavior and normal activity patterns will not be altered dramatically, and their overall status will not be impaired. The Refuge will also implement a monitoring program to help assess disturbance effects on wildlife and habitat. Improved outreach and educational information for Refuge visitors involved in activities associated with boating would also help to reduce the impacts associated with boating activities.

Mandatory Re-Evaluation Date (provide month and year for “allowed” uses only):

\_\_\_\_\_ Mandatory 15-year Re-Evaluation (for priority public uses)

Mandatory 10-year Re-Evaluation, Date to be provided in Final EIS/CCP (for all uses other than priority public uses)

NEPA Compliance for Refuge Use Decision (check one below):

\_\_\_ Categorical Exclusion without Environmental Action Statement

\_\_\_ Categorical Exclusion and Environmental Action Statement

\_\_\_ Environmental Assessment and Finding of No Significant Impact

Environmental Impact Statement and Record of Decision

Refuge Determination

Prepared by:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

Refuge Manager/  
Project Leader  
Approval:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

Concurrence

Refuge Supervisor:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

Regional Chief,  
National Wildlife  
Refuge System:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

## References

- Bauer, H. G., H. Stark, and P. Frenzel. 1992. Disturbance factors and their effects on water birds wintering in the western parts of Lake Constance. *Der Ornithologische Beobachter* 89:81-91.
- Bratton, S.P. 1990. Boat disturbance of ciconiiformes in Georgia estuaries. *Colonial Waterbirds* 13:124-128.
- Burton, N.H.K., P.R. Evans, and M.A. Robinson. 1996. Effects on shorebird numbers of disturbance, the loss of a roost site and its replacement by an artificial island at Harlepool, Cleveland. *Biol. Conserv.* 77:193-201.
- DeLong, A. 2002. Managing Visitor Use & Disturbance of Waterbirds. A Literature Review of Impacts and Mitigation Measures.
- Hoffman, D.J. 1989. Embryotoxicity and teratogenicity of environmental contaminants to bird eggs. *Reviews of Environmental Contamination and Toxicology.* 115:41-50.
- Huffman, K. 1999. San Diego South Bay survey report-effects of human activity and water craft on wintering birds in South San Diego Bay. USFWS report.
- Jahn, L.R. and R.A. Hunt. 1964. Duck and coot ecology and management in Wisconsin. Wisconsin Conserv. Dep. Tech. Bull. No. 33. 212pp.
- Kahlert, J. 1994. Effects of human disturbance on broods of red-breasted mergansers *Mergus serrator*. *Wildfowl* 15:222-231.
- Kaiser, M.S. and E.K. Fritzell. 1984. Effects of river recreationists on green-backed heron behavior. *J. Wildl. Manage.* 48: 561-567.
- Knight, R.L. and D.N. Cole. 1995. Wildlife responses to recreationists. *in Wildlife and Recreationists* R.L. Knight and K.J. Gutzwiller, eds.). Island Press, Covelo, California.
- Knight, R.L. and S.K. Knight. 1984. Responses of wintering bald eagles to boating activity. *J. Wildl. Manage.* 48:999-1004.
- Pfister, C., B.A. Harrington, and M. Lavine. 1992. The impact of human disturbance on shorebirds at a migration staging area. *Biological Conserv.* 60:115-126.
- Rodgers, Jr., J.A. and S.T. Schwikert. 2002. Buffer-zone distances to protect foraging and loafing waterbirds from disturbance by personal watercraft and outboard-powered boats. *Conservation Biology.* Vol. 16, No. 1:216-224.
- Skagen, S.K. 1980. Behavioral responses of wintering bald eagles to human activity on the Skagit River, Washington. Seattle, Washington. 231-241pp.
- Skagen, S.K., R.L. Knight, and G.H. Orians. 1991. Human disturbances of an avian scavenging guild. *Ecological Applications.* 1:215-225.
- Speight, M.C.D. 1973. Outdoor recreation and its ecological effects: a bibliography and review. University college London, England, Discussion Papers in Conservation 4. 35pp.
- Tjarnlund U., G. Ericson, E. Landesjoo, I. Petterson, and L. Balk. 1993. Investigation of the biological effects of 2-cycle outboard engines' exhaust on fish. *Inst. of Applied Research, U. of Stockholm.*
- Thornburg, D.D. 1973. Diving duck movements on Keokuk Pool, Mississippi River. *J. Wildl. Manage.* 37:382-389.

- Tuite, C.H., M. Owen, and D. Paynter. 1983. Interaction between wildfowl and recreation at Llangorse Lake and Talybont Reservoir, South Wales. *Wildfowl* 34:48-63.
- USFWS (U.S. Fish and Wildlife Service). 1986. Pacific Bald Eagle Recovery Plan. U.S. Fish and Wildlife Service. Portland, OR. 160 pp.
- USFWS. 2002. Nisqually National Wildlife Refuge Draft Comprehensive Conservation Plan and Environmental Impact Statement. U.S. Fish and Wildlife Service, Region 1.
- Vos, D.K., R.A. Ryder, and W.D. Gaul. 1985. Response of breeding great blue herons to human disturbance in northcentral Colorado. *Colonial Waterbirds* 8:13-22.
- WDFW (Washington Department of Fish and Wildlife). 2001. Priority species and habitats list. Available at: <http://www.wa.gov/wdfw/hab/phsvert.htm#birds>.

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## COMPATIBILITY DETERMINATION

*(August 2004)*

**Use:** Recreational Fishing (bank, boat and shellfishing)

**Refuge Name:** Nisqually National Wildlife Refuge, located in Thurston and Pierce counties, Washington.

**Establishing and Acquisition Authorities:** Nisqually National Wildlife Refuge (NWR) was established on January 22, 1974 with approval by the Migratory Bird Conservation Commission. Approximately 2,925 acres of the approved 3,936 acres have been acquired. Legal authorities used for establishment of the Refuge include: Migratory Bird Conservation Act, as amended (16 U.S.C. 715-715d, 715e, 715f - 715r); and Fish and Wildlife Act of 1956, as amended (16 U.S.C. 742a - 742j).

**Refuge Purposes:** Nisqually NWR purposes include:

...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds (16 U.S.C.-715d).

...for the development, advancement, management, conservation, and protection of fish and wildlife resources ...(16 U.S.C. 742f(a)(4).

... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ...16 U.S.C. 742f(b)(1).

**National Wildlife Refuge System Mission:** “To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd et seq.]).

**Description of Use:** Currently, recreational fishing occurs in McAllister Creek, in the Nisqually River, and on the tideflats at the mouth of McAllister Creek and north of the Brown Farm Dike. Boat launch sites providing access to McAllister Creek and Nisqually River are primarily from the Luhr Beach Boat Ramp, but also include other launching facilities in southern Puget Sound. The Refuge offers a walk-in bank fishing area along McAllister Creek. Anglers must pay the Refuge entrance fee and hike approximately  $\frac{3}{4}$  mile on the Refuge trail to the designated fishing area. Illegal access occurs frequently at the southern boundary of the Refuge, where McAllister Creek flows under I-5. Some fishing activity also occurs at a pier located at the Luhr Beach boat ramp. Fish caught by Refuge visitors primarily include chinook and chum salmon, but also some cutthroat and steelhead. Although the Refuge does not closely monitor all fishing on the Refuge, use is estimated to be approximately 3,800 anglers per year based on various public use data. During low spring and summer tides, shellfishers access the Refuge and State tideflats from Luhr Beach. Although the intertidal area at the mouth of McAllister Creek has been closed to shellfishing due to elevated levels of fecal coliform bacteria since 2000, this closure is not enforced and some shellfishing does still occur.

The CCP Proposed Action would continue to provide fishing opportunities from boats in the Nisqually River and McAllister Creek. The Research Natural Area (RNA) would be posted closed to fishing and the closure enforced to comply with Refuge RNA policy. However, since estuarine restoration along McAllister Creek would remove the dike on which the current bank fishing occurs, this fishing area will no longer be available. The Service would investigate the feasibility of establishing a new bank fishing area along the east bank of the Nisqually River, north of I-5, on Nisqually Indian Tribal and Refuge property. The development of this site would need to be coordinated with the development of a trail system and visitor contact station/parking area located in the uplands above this property. The Refuge would also investigate fishing opportunities for disabled users at Luhr Beach and along the Nisqually River.

Shellfishing will remain closed in the tideflats as directed by the Washington State Department of Health. The Refuge would re-evaluate this compatibility determination if recreational shellfishing is opened in the future because of improved water quality.

**Uses within the Proposed Expansion Area:** Chapters 2 and 3 of the Final CCP/EIS for the Nisqually NWR identify areas in which the Service would seek to acquire land from willing sellers outside of the current Refuge boundary (USFWS 2002).

There are several public recreational fishing sites in the proposed expansion area. The majority of fishing use occurs on the Nisqually River accessed from Fort Lewis property (Trotter's Woods) on the east side of the river or from a State owned (WDFW) bank fishing site on the west side of the river. This WDFW site was designed to be completely accessible; however, changes in the river have made this site less usable. The numbers of anglers using these sites are not known, but observations indicate very heavy use when salmon runs are occurring. The remote nature of these sites and the low level of enforcement have resulted in high amounts of fishing litter and debris at some of these sites. Use in the Trotter's Woods area is largely unregulated, and evidence of habitat deterioration from vehicle use and extensive litter exists in this riparian forest. If Trotter's Woods is managed by the Service through acquisition or a cooperative management agreement, the area will be managed to reduce habitat damage and improve the fishing program. This includes development of a parking area, improved vehicle traffic management within the forested areas, and riparian restoration. In addition, bank fishing opportunities south of I-5 on McAllister Creek would be established, if appropriate parcels are acquired, to replace the site (north of I-5) that will be lost due to dike removal for estuarine restoration.

The CCP Proposed Action in the expansion area is to provide quality fishing opportunities by maintaining selected traditional bank fishing and water access sites, improve facilities, and close other sites to protect habitat values, for example, limiting vehicle access in sensitive riparian habitats. Location criteria for new sites considered will be accessibility, feasibility, minimal conflicts with other users, maintenance, compatibility, wildlife and habitat disturbance potential, and potential to promote a quality fishing experience.

**Availability of Resources:** The following funding/annual costs would be required to administer and manage fishing activities as described above:

	<b>One-time Cost</b>	<b>Recurring Cost</b>
Bank fishing area (development, eastside)	18K	
Law Enforcement		35K
Posting/signing	16K	2K
Outreach, Education, and Monitoring	3K	5K
Development of Accessible Sites (Luhr Beach, Nisqually River)	60K	3K
Development and maintenance of Trotter's Woods Site	50K	15K
Maintenance of Parking Area		10K
Administration	<u>18K</u>	<u>5K</u>
<b>TOTAL</b>	<b>\$165K</b>	<b>\$75K</b>

Additional funds would be required to construct, operate, and maintain visitor facilities and interpretive materials. Law enforcement staffing would also be needed. Funding would be sought through the Service budget process. Other sources will be sought through strengthened partnerships, grants, coordination with other law enforcement agencies, and additional Refuge operations funding to support a safe, quality public use program as described above.

**Anticipated Impacts of Use:** Fishing as a solitary and stationary activity tends to be less disturbing to wildlife than hunting or motorized boating (Tuite et al. 1983). It is well recognized that fishing can give many people a deeper appreciation of fish and wildlife and a better understanding of the importance of conserving habitat, which has ultimately contributed to the Refuge System mission. Furthermore, despite the potential impacts of fishing, a major goal of Nisqually NWR is to provide opportunities for wildlife-dependent recreation. Fishing is one of the six priority public uses on the National Wildlife Refuge System. Of key concern then, is to manage the activity to keep adverse impacts to within acceptable limits.

Angler activities while on Refuge are and will remain consistent with State guidelines. Harvest-related impacts for fish stocks associated with sportfishing in the Nisqually River and McAllister Creek are estimated annually and taken into consideration by the State in their development of annual pre-season fishing agreements and associated regulations. Therefore, impacts to fish populations should be minimized.

Additional disturbance would be caused to birds and other wildlife using the open waters and rivers/creeks where fishing would occur. Fishing activities may influence the composition of bird communities, as well as distribution, abundance, and productivity of waterbirds (Tydeman 1977, Bouffard 1982, Bell and Austin 1985, Bordignon 1985, Edwards and Bell 1985, and Cooke 1987). Anglers often fish in shallow, sheltered bays and creeks that birds prefer, negatively impacting distribution and abundance of waterfowl, grebes, and coots (Cooke 1987). Increases in anglers and associated shoreline activity discouraged waterfowl from using otherwise suitable habitat (Jahn and Hunt 1964). In Britain, anglers displaced waterfowl from their preferred feeding and roosting areas and caused wigeon, green-winged teal, pochard, and

mallard to depart from a reservoir prematurely (Jahn and Hunt 1964). Anglers influenced the numbers, behavior, and diurnal distribution of avian scavengers present at sites in Washington, when compared to non-fishing days (Knight et al. 1991). Shoreline activities, such as human noise, would cause some birds to flush and go elsewhere. In addition, trampling of vegetation and deposition of sewage or other chemicals are expected to commonly occur (Liddle and Scorgie 1980). Disturbance and destruction of riparian vegetation, bank stability, and water quality may result from high levels of bank fishing activities.

Boating associated with fishing can alter bird distribution, reduce use of particular habitats or entire areas by waterfowl and other waterbirds, alter feeding behavior and nutritional status, and cause premature departure from areas (Knight and Cole 1995). Impacts of motorized boating can occur even at low densities, given their noise, speed, and ability to cover extensive areas in a short amount of time. This is especially the case in the RNA and McAllister Creek, both areas with high waterfowl use. The habitat along McAllister Creek is a relatively narrow tidal system that receives high use by a variety of waterfowl, waterbirds, wading birds, and raptors. In addition, an active bald eagle nest is located along McAllister Creek. The nesting period identified in the Bald Eagle Recovery Plan identifies January 1 as the beginning of the nesting season when special protective measures should begin (USFWS 1996). A great blue heron nesting rookery has been located along McAllister Creek for several years, with nesting activity beginning as early as February. Washington State requires a minimum 300-meter buffer zone to protect colonies from human disturbances (WDFW 2001). Boating activity in this area would affect the duration and pattern of use by wildlife in this narrow system (see Compatibility Determination for "Recreational Boating").

If recreational shellfish harvest activity is re-opened at the mouth of McAllister Creek, it will be managed consistent with State guidelines. Harvest-related impacts to shellfish stocks are estimated annually and taken into consideration by the State in their development of annual seasonal harvest dates and allowances. Therefore, impacts to shellfish populations should be reduced. However, activity associated with shellfishing may result in disturbance to the habitat caused by foot traffic and digging activity on mudflats, aquatic plants, and nearby salt marshes. Additional disturbances would occur as described above associated with fishing activity.

**Anticipated Impacts from Uses within the Proposed Expansion Area:** The following conditions must be met before allowing existing uses to occur on an interim basis on newly acquired lands: (1) There is no indirect, direct, or cumulative threat anticipated to human health or safety; (2) There is no indirect, direct, or cumulative threat anticipated to natural or cultural resources; (3) The use is consistent with management of existing Nisqually NWR lands and would contribute to achieving Refuge goals. In particular, existing Refuge regulations would not be compromised; (4) The newly acquired lands represent a meaningful unit within which to manage the activity; and (5) There are no anticipated conflicts with priority public uses.

Anticipated impacts from fishing in the expansion area would be the same as described above.

**Public Review and Comment:** Public review and comments were solicited in conjunction with the Draft CCP/EIS for Nisqually NWR, released in December 2002. Few comments were received on the Compatibility Determinations. Also see the Summary of Changes document and

Appendix M (Comments and Responses). No changes were necessary based on comments received.

**Determination:**

Use is Not Compatible

Use is Compatible with the Following Stipulations

**Stipulations necessary to ensure compatibility:** Sanctuary areas will be designated to provide high quality habitat for feeding, resting, breeding, and thermal protection for waterfowl and other wildlife species. The RNA, a mixture of nearshore, intertidal, and salt marsh habitat, will be closed to fishing year round and to boating from October 1 to March 31. In addition, the restored estuarine area will be closed to fishing and other public use activities, except for wildlife observation from trails at the edges, to allow undisturbed research and monitoring of wildlife and habitat response to restoration activities. Some of the freshwater units will serve as sanctuary for waterfowl that prefer to move between the estuary and freshwater wetlands.

Boating associated with fishing has high potential for adversely impacting wildlife in the estuary. Three factors that exert the most disturbance to wildlife due to boating are noise, speed, and significantly increased access to more parts of the estuary. Thus, boating regulations to ensure compatibility during the fishing season will include the following: (1) 5 mph speed limit for boats in all Refuge waters; (2) the RNA will be closed to boats from October 1 through March 31 to reduce disturbance to wintering waterfowl populations; and (3) the estuarine restoration area currently within the Brown Farm Dike will be closed to boats year round. No motorized or non-motorized boats will be allowed into this area and all public access will occur on trails only. Signs will be installed to mark closed areas. The Refuge remains concerned about impacts to wildlife using McAllister Creek. Monitoring would be conducted to ensure that these stipulations are sufficient to minimize disturbance to wildlife.

The Refuge will provide information on fishing and shellfishing regulations at the Luhr Beach boat ramp, Visitor Contact Stations, and through printed brochures. Information will also include current migratory bird and Refuge regulations, and maps of closed areas. Refuge officers will enforce closed areas and boat speed limits. The Refuge will monitor and evaluate the fishing program and users to determine if objectives are being met.

**Justification:** Recreational fishing is one of the six priority public uses of the National Wildlife Refuge System. Providing a quality fishing program contributes to achieving one of the Refuge's goals. This program as described was determined to be compatible despite the potential impacts that fishing and supporting activities (boating) can have on the Service's ability to achieve Refuge purposes. Sufficient restrictions will be placed on fishing, boating, and other public uses to ensure that an adequate amount of high quality feeding, breeding, and resting habitat would be available for migratory birds in relatively undisturbed areas (sanctuaries). Although boating has the greatest potential to impact wetland wildlife, implementing the prescribed measures listed in the Stipulations section should reduce many of these impacts. In addition, the majority of waterfowl use on the Refuge occurs in the winter and spring months, with some birds arriving as early as September and October. Since the majority of the fishing activity occurs in the summer and fall (through mid-October), disturbance to waterfowl species is reduced.

It is anticipated that an adequate amount of estuary, open water, and riverine habitat would be available to the majority of waterfowl, waterbirds, and other wildlife because: (1) some high wildlife use areas will be set aside as sanctuary; (2) new boating regulations would be implemented and enforced; and (3) bank fishing activity will be confined to designated areas and enforced. Thus, it is anticipated that wildlife, primarily waterbirds, will find sufficient food resources and resting places such that their abundance and use of the Refuge will not be measurably lessened, fishing pressure will not cause fish stocks to decline, the physiological condition and production of waterfowl and other waterbirds will not be impaired, their behavior and normal activity patterns will not be altered dramatically, and their overall welfare will not be impaired. A program will be implemented to monitor some of these factors.

Mandatory Re-Evaluation Date (provide month and year for “allowed” uses only):

Mandatory 15-year Re-Evaluation Date to be provided in Final EIS/CCP (for priority public uses)

Mandatory 10-year Re-Evaluation (for all uses other than priority public uses)

NEPA Compliance for Refuge Use Decision (check one below):

Categorical Exclusion without Environmental Action Statement

Categorical Exclusion and Environmental Action Statement

Environmental Assessment and Finding of No Significant Impact

Environmental Impact Statement and Record of Decision

Refuge Determination

Prepared by: \_\_\_\_\_  
(Signature) (Date)

Refuge Manager/  
Project Leader  
Approval: \_\_\_\_\_  
(Signature) (Date)

Concurrence

Refuge Supervisor: \_\_\_\_\_  
(Signature) (Date)

Regional Chief,  
National Wildlife  
Refuge System: \_\_\_\_\_  
(Signature) (Date)

## References

- Bell, D.V. and L.W. Austin. 1985. The game-fishing season and its effects on overwintering wildfowl. *Biol. Conserv.* 33:65-80.
- Bordignon, L. 1985. Effetti del disturbo antropico su una popolazione di germano reale *Anas platyrhynchos*. (Effects of human disturbance on a population of mallard *Anas platyrhynchos*). *Avocetta* 9:87-88.
- Bouffard, S.H. 1982. Wildlife values versus human recreation: Ruby Lake National Wildlife Refuge. *N. Am. Wildl. Conf.* 47:553-556.
- Cooke, A.S. 1987. Disturbance by anglers of birds at Grafham Water. *ITE Symposium* 19:15-22.
- Edwards, R.W. and D.V. Bell. 1985. Fishing in troubled waters. *New Science* 1446, 7 March:19-21.
- Jahn, L.R. and R.A. Hunt. 1964. Duck and coot ecology and management in Wisconsin. Wisconsin Conserv. Dep. Tech. Bull. No. 33. 212pp.
- Knight, R.L., D.P. Anderson, and N. V. Marr. 1991. Responses of an Avian Scavenging Guild to Anglers. *Biol. Conserv.* 56:195-205.
- Knight, R.L. and D.N. Cole. 1995. Wildlife responses to recreationists. *in* *Wildlife and Recreationists* (R.L. Knight and K.J. Gutzwiller, eds.) Island Press, Covelo, California.
- Liddle, M.J. and H.R.A. Scorgie. 1980. The effects of recreation on freshwater plants and animals: a review. *Biol. Conserv.* 17:183-206.
- Tjarnlund, U., G. Ericson, E. Lindesjoo, I. Petterson, and L. Balk. 1993. Investigation of the biological effects of 2-cycle outboard engines' exhaust on fish. Institute of Applied Research, University of Stockholm.
- Tuite, C.H., M. Owen, and D. Paynter. 1983. Interaction between wildfowl and recreation at Llangorse Lake and Talybont Reservoir, South Wales. *Wildfowl* 34:48-63.
- Tydeman, C.F. 1977. The importance of the close fishing season to breeding bird communities. *J. of Environmental Management* 5 :289-296.
- USFWS (U.S. Fish and Wildlife Service). 1986. Pacific Bald Eagle Recovery Plan. U.S. Fish and Wildlife Service. Portland, OR. 160 pp.
- USFWS. 2002. Nisqually National Wildlife Refuge Draft Comprehensive Conservation Plan and Environmental Impact Statement. U.S. Fish and Wildlife Service, Region 1.
- WDFW (Washington Department of Fish and Wildlife). 2001. Priority species and habitats list. Available at: <http://www.wa.gov/wdfw/hab/phsvert.htm#birds>.

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## COMPATIBILITY DETERMINATION

*(August 2004)*

**Use:** Waterfowl Hunting

**Refuge Name:** Nisqually National Wildlife Refuge, located in Thurston and Pierce counties, Washington.

**Establishing and Acquisition Authorities:** Nisqually National Wildlife Refuge (NWR) was established on January 22, 1974 with approval by the Migratory Bird Conservation Commission. Approximately 2,925 acres of the approved 3,936 acres have been acquired. Legal authorities used for establishment of the Refuge include: Migratory Bird Conservation Act, as amended (16 U.S.C. 715-715d, 715e, 715f - 715r); and Fish and Wildlife Act of 1956, as amended (16 U.S.C. 742a - 742j).

**Refuge Purposes:** Nisqually NWR purposes include:

...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds (16 U.S.C.-715d).

...for the development, advancement, management, conservation, and protection of fish and wildlife resources ...(16 U.S.C. 742f(a)(4).

... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ...16 U.S.C. 742f(b)(1).

**National Wildlife Refuge System Mission:** “To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd et seq.]).

**Description of Use:** Nisqually NWR lands are not open to waterfowl hunting. Waterfowl hunting is allowed on 617 acres of WDFW lands within the approved Refuge boundary. Due to the irregular shape and scattered locations of these inholdings, and difficulty in posting and maintaining boundary signs, unauthorized hunting occurs on up to 1,189 acres of adjacent Refuge lands. This hunting activity has been considered administratively uncontrollable, so where signing is absent, hunting closures have not been enforced. Since the unauthorized hunting occurs on 63% of the estuarine habitat within the Refuge, including the Research Natural Area (RNA), current hunting activity provides insufficient sanctuary for estuarine-dependent wildlife and allows an unauthorized use to continue on large parts of the Refuge.

The CCP Proposed Action includes formally opening a total of approximately 191 acres of waters and tideflats of Nisqually NWR lands to waterfowl hunting (USFWS 2002). These lands are contiguous with the WDFW parcel north of the Brown Farm Dike. The RNA boundary will be moved to the east to provide high quality hunting area at the mouth of the River, reducing the RNA by 73 acres. However, a 44-acre area will be added to the RNA at the south end. By opening 191 acres of the Refuge to waterfowl hunting, the hunting area north of the Brown Farm

Dike will be configured in a single rectangular block, greatly reducing confusing boundary issues. Areas designated as “No Hunting Areas” will be posted and enforced, eliminating the unauthorized hunting that has occurred on the Refuge in the past. Waterfowl hunting will continue on all WDFW lands. A 25-shell limit will be instituted on Refuge and WDFW lands. WDFW will continue to have jurisdiction and management responsibility over WDFW lands, and the Service will manage the hunting program on Refuge lands. Hunting will be allowed consistent with annual State hunting regulations and seasons, and will be permitted by boat access only in the posted Refuge hunt area. The area within the Brown Farm Dike, including the estuarine restoration area, will remain closed to hunting. The waterfowl hunting season generally falls within the period from October through January. There will be no limit on the number of hunters, hunt days, and no designated blind sites. The State will manage their own hunt program on WDFW lands.

**Uses within the Proposed Expansion Area:** Chapters 2 and 3 of the Final CCP/EIS for Nisqually NWR identify areas in which the Service would seek to acquire land from willing sellers outside of the current Refuge boundary (USFWS 2002). Some private hunting occurs on property within the expansion area. The Medicine Creek Hunt Club consists of a small number of hunters using private property south of I-5. Waterfowl hunting also takes place in Trotter’s Woods by approximately 3-4 hunters. Should these areas be acquired by the Service, the Refuge would consider allowing walk-in waterfowl hunting with set blinds if sufficient lands have been acquired to allow for adequate wildlife sanctuary and minimal conflicts with other priority public uses. This Compatibility Determination will be updated in the future to include walk-in hunting in the expansion area.

**Availability of Resources:** The following funding/annual costs would be required to administer and manage waterfowl hunting activities as described above:

	<b>One-time Cost</b>	<b>Recurring Cost</b>
Survey and Post	75K	10K
Maintenance of Parking Area		10K
Law Enforcement		20K
Administration	25K	15K
Outreach, Education, and Monitoring	<u>15K</u>	<u>10K</u>
<b>TOTAL</b>	<b>\$115K</b>	<b>\$65K</b>

Additional funds would be required to construct, operate, and maintain a hunt program, visitor facilities, and interpretive materials. Law enforcement staffing would be needed. Funding would be sought through the Service budget process. Other sources will be sought through strengthened partnerships, grants, and additional Refuge operations funding to support a safe, quality public use program as described above.

**Anticipated Impacts of Use:** By its very nature, waterfowl hunting has very few if any positive effects on waterfowl and other birds while the activity is occurring, but it is well recognized that this activity has given many people a deeper appreciation of wildlife and a better understanding of the importance of conserving their habitat, which has ultimately contributed to the Refuge System mission. Furthermore, despite the potential impacts of hunting, a goal of Nisqually NWR is to provide opportunities for quality wildlife-dependent recreation. By law, hunting is

one of the six priority public uses of the National Wildlife Refuge System. Of key concern is to offer a safe and quality program and to maintain adverse impacts within acceptable limits.

Although hunting directly impacts individuals, the amount of waterfowl harvest is not expected to have a measurable effect on Refuge populations, especially since waterfowl hunting activity is not extremely high in the delta. For example, the average hunter visit per day was 8.4 during the 1998/99 season (USFWS unpublished data). Hunting may be either compensatory or additive to natural mortality (Anderson 1995). Compensatory mortality occurs when hunting substitutes for other forms of mortality (disease, competition, predation, severe weather, etc.). Additive mortality occurs when hunting compounds the total mortality. In some cases, hunting can be used as a management tool to control populations. In concert with Canada, Mexico, and multi-state Flyway councils, the Service and WDFW regulate hunting so that harvest does not reduce populations to unsustainable levels.

Direct effects of hunting on waterfowl are mortality, wounding, and disturbance (DeLong 2002). Hunting can alter behavior (e.g., foraging time), population structure, and distribution patterns of wildlife (Owens 1977, Raveling 1979, White-Robinson 1982, Thomas 1983, Bartelt 1987, Madsen 1985, and Cole and Knight 1990). In Denmark, hunting was documented to affect the diversity and number of birds using a site (Madsen 1995). Avian diversity changed from predominantly mute swan and mallard to a more even distribution of a greater number of species when a sanctuary was established. Hence, species diversity increased with the elimination of hunting. There also appears to be an inverse relationship between the numbers of birds using an area and hunting intensity (DeLong 2002). In Connecticut, lesser scaup were observed to forage less in areas that were heavily hunted (Cronan 1957). In California, the numbers of northern pintails on Sacramento NWR non-hunt areas increased after the first week of hunting and remained high until the season was over in early January (Heitmeyer and Raveling 1988). Following the close of hunting season, ducks generally increased their use of the hunt area; however, use was lower than before the hunting season began.

Human disturbance to wintering birds and other wildlife using the open waters and marshes on the Nisqually delta would occur as a result of hunting activity. Migratory and wintering waterfowl generally attempt to minimize time spent in flight and maximize foraging time because flight requires considerably more energy than any other activity, other than egg laying. Human disturbance associated with hunting includes loud noises and rapid movements, such as those produced by shotguns and boats powered by outboard motors. This disturbance, especially when repeated over a period of time, compels waterfowl to change food habits, feed only at night, lose weight, or desert feeding areas (Belanger and Bedard 1995, Madsen 1995, Wolder 1993). Disturbance levels from hunting activity outside Chincoteague NWR were found to be high enough to force wintering black ducks into a pattern of nocturnal feeding within surrounding salt marsh and diurnal resting within Refuge impoundments (Morton et al. 1989a, 1989b). Unhunted populations have been documented to behave differently from hunted ones (Wood 1993).

These impacts can be reduced by the presence of adjacent sanctuary areas where hunting does not occur, and birds can feed and rest relatively undisturbed. Sanctuaries or non-hunt areas have been identified as the most common solution to disturbance problems caused from hunting (Havera et al. 1992). Prolonged and extensive disturbances may cause large numbers of waterfowl to leave disturbed areas and migrate elsewhere (Madsen 1995, Paulus 1984). In Denmark, hunting disturbance effects were experimentally tested by establishing two sanctuaries

(Madsen 1995). Over a 5-year period, these sanctuaries became two of the most important staging areas for coastal waterfowl. Numbers of dabbling ducks and geese increased 4 to 20 fold within the sanctuary (Madsen 1995). Thus sanctuary areas are very important to minimize disturbance to waterfowl populations to ensure their continued use of the Nisqually delta.

Intermittent hunting can be a means of minimizing disturbance, especially if rest periods in between hunting events are weeks rather than days (Fox and Madsen 1997). It is common for Refuges to manage hunt programs with non-hunt days. At Sacramento NWR, 3-16% of pintails were located on hunted units during non-hunt days, but were almost entirely absent in those same units on hunt days (Wolder 1993). In addition, northern pintails, American wigeon, and northern shovelers decreased time spent feeding on days when hunting occurred on public shooting areas, as compared to non-hunt days (Heitmeyer and Raveling 1988). However, intermittent hunting may not always greatly reduce hunting impacts. The intermittent hunting program of three hunt days per week at Sacramento NWR results in lower pintail densities on hunt areas during non-hunt days than non-hunt areas (Wolder 1993). In Germany, several studies reported a range from a few days to approximately three weeks for waterbird numbers to recover to pre-disturbance levels (Fox and Madsen 1997). The proposed hunt program at Nisqually NWR will not be intermittent in order to provide consistent management with the existing program on adjacent WDFW lands and waters, preventing confusion among hunters on the delta.

Boating activity associated with hunting during the fall and winter can alter distribution, reduce use of particular habitats or entire areas by waterfowl and other birds, alter feeding behavior and nutritional status, and cause premature departure from areas (Knight and Cole 1995). In the upper Midwest, motor boating and hunting have been found to be the two main activities that disturb waterfowl (Korschgen et al. 1985). In Connecticut, selection of feeding sites by lesser scaup was influenced by disturbances from hunters, anglers, and pleasure boaters (Cronan 1957). In Germany, boating pressure on wintering waterfowl had reached such a high level that it was necessary to establish larger sanctuaries, implement a seasonal closure on water sports and angling, and impose a permanent ban on hunting (Bauer et al. 1992). Impacts of boating can occur even at low densities, given their noise, speed, and ability to cover extensive areas in a short amount of time. This is especially important in the RNA and McAllister Creek. These are both areas with high waterfowl use. The habitat along McAllister Creek is a relatively narrow tidal system that receives high use by a variety of waterfowl, waterbirds, wading birds, and raptors. In addition, an active bald eagle nest is located along McAllister Creek. The nesting period identified in the Bald Eagle Recovery Plan identifies January 1 as the beginning of the nesting season when special protective measures should begin (USFWS 1986). A great blue heron nesting colony, located along McAllister Creek since the 1970s, has been declining for several years. Nesting great blue herons are sensitive to a variety of human disturbances. Washington State requires a minimum 300-meter buffer zone to protect colonies from human disturbances (WDFW 2001). It is possible that hunting and associated boating activities may be one of the contributing factors affecting these nesting birds, as well as other wildlife using this narrow system.

Additional impacts from hunting activity include conflicts with individuals participating in wildlife-dependent priority public uses, such as canoers, kayakers, and other wildlife observers. The Refuge has received numerous comments from canoers and kayakers indicating concern for their safety while boating during the waterfowl hunting season.

**Anticipated Impacts of Uses within the Proposed Expansion Area:** The following conditions must be met before allowing existing uses to occur on an interim basis on newly acquired lands: (1) There is no indirect, direct, or cumulative threat anticipated to human health or safety; (2) There is no indirect, direct, or cumulative threat anticipated to natural or cultural resources; (3) The use is consistent with management of existing Nisqually NWR lands and would contribute to achieving Refuge goals. In particular, existing Refuge regulations would not be compromised; (4) The newly acquired lands represent a meaningful unit within which to manage the activity; and (5) There are no anticipated conflicts with priority public uses.

Anticipated impacts associated with a new walk-in hunting program would be addressed in the updated Compatibility Determination to be developed in the future.

**Public Review and Comment:** Public review and comments were solicited in conjunction with the Draft CCP/EIS for Nisqually NWR, released in December 2002. Few comments were received on the Compatibility Determinations. Also see the Summary of Changes document and Appendix M (Comments and Responses). Minor changes were made to reflect RNA acreages accurately.

**Determination:**

Use is Not Compatible

Use is Compatible with the Following Stipulations

**Stipulations necessary to ensure compatibility:** Refuge hunt programs will be designed to provide high quality experiences. A quality hunt experience means that: (1) hunters are safe; (2) hunters exhibit high standards of ethical behavior; (3) hunters are provided with uncrowded conditions; (4) hunters have reasonable harvest opportunities; (5) hunters are clear on which areas are open and closed to hunting; and (6) minimal conflicts occur between hunters and other visitors, especially those engaging in wildlife-dependent priority public uses. The 7-day per week hunt program proposed on the Refuge would include the following restrictions to reduce impacts: (1) a limited hunting area (area will be posted and enforced); (2) a 25-shell limit; (3) redefining and reducing the RNA by 73 acres to allow for hunting at the mouth of the Nisqually River, but adding 44 acres to the south end of the RNA; (4) a 200-yard buffer from trails; (5) sufficient feeding and resting habitat for waterfowl in areas closed to hunting (sanctuary); and (6) periodic biological and social monitoring and evaluation of hunting program, including feedback from users to determine if objectives are being met.

Sanctuary areas must provide high quality habitat for feeding, resting, and thermal protection. Since the waterfowl hunt in the delta is focused in estuarine habitat, it is important that sufficient estuarine habitat on the Refuge be set aside as sanctuary. The RNA (764 acres), a mixture of nearshore, intertidal, and salt marsh habitat, will be closed to all consumptive uses year-round and boating during the waterfowl hunting season (October 1 - March 31) to provide this sanctuary. Estuarine habitat within McAllister Creek will also be closed to hunting. The newly restored estuarine area (699 acres) will be closed to public access to ensure successful restoration and to allow undisturbed research and monitoring to evaluate wildlife and habitat response to restoration activities. This area thus will also serve as a sanctuary site. The majority of the

remaining diked area (263 acres) will serve as sanctuary for waterfowl that prefer to move between the estuary and freshwater wetlands. Some of the freshwater units would include public access on trails and therefore would not function as complete sanctuary. Monitoring must demonstrate that sanctuary units are functional, including receiving significant daytime use by waterfowl throughout the hunting season.

Boating associated with hunting has high potential for adversely impacting wildlife in the estuary. Three factors that exert the most disturbance to wildlife due to boating are noise, speed, and significantly increased access to more parts of the estuary. Thus, boating regulations to ensure compatibility during the hunting season will include the following: (1) 5 mph speed limit for boats in all Refuge waters; (2) the RNA will be closed to boats from October 1 through March 31 to reduce disturbance to wintering waterfowl populations; and (3) the estuarine restoration area currently within the Brown Farm Dike will be closed to boats year round. No motorized or non-motorized boats will be allowed into this area and all public access will occur on trails only. Monitoring would be conducted to evaluate whether these stipulations are sufficient to minimize disturbance to wildlife.

Hunter compliance with current migratory bird and Refuge regulations would be achieved through a combination of printed information, signing, outreach efforts, and enforcement of regulations by Refuge officers.

**Justification:** Hunting is one of the six priority public uses of the National Wildlife Refuge System. Providing a quality hunting program contributes to achieving one of the Refuge goals. This program as described was determined to be compatible, in view of the potential impacts that hunting and supporting activities (boating) can have on the Service's ability to achieve Refuge purposes and goals. The Refuge would be opened to waterfowl hunting, with sufficient restrictions in place on hunting, boating, and other public uses to ensure that an adequate amount of high-quality feeding and resting habitat would be available in relatively undisturbed areas (sanctuaries) for the majority of waterfowl and other wetland birds using Nisqually NWR. Although boating has the greatest potential to impact wetland wildlife, implementing the prescribed measures listed in the Stipulations section and in the Recreational Boating Compatibility Determination should reduce major impacts to acceptable levels.

Refuge hunt programs are designed to provide high quality experiences. In general, hunting on Refuges should be superior to that available on other private or public lands, which may require special restrictions (Refuge Manual 8RM5). Measures are often used to ensure quality, including limited hunt days and shell limits and using buffers for public use trails eliminating the need for seasonal trail closures. The limited hunt program is proposed on the Refuge to accomplish the following: (1) accommodate the existing hunt program on WDFW lands; (2) establish consistent regulations across all lands and waters within the Nisqually delta; (3) provide a quality hunting experience that meets Refuge guidelines and policies; and (4) provide sufficient waterfowl sanctuary and resolve the current unauthorized hunting situation.

It is anticipated that an adequate amount of quality, non-hunted estuarine habitat would be available to the majority of waterfowl and other wetland birds because: (1) some high wildlife use areas will be set aside as sanctuary (764 acres in the RNA and 699 acres of restored estuarine area); (2) boating regulations would be maintained and enforced; and (3) hunting activity will be confined to

designated areas because “no hunting zones” will be posted and enforced. Consolidation of the hunting area into a single block of land provides a distinct, manageable unit that can be more easily delineated, posted, and enforced, resulting in larger sections of estuary in the delta that are available for waterfowl use. Thus, it is anticipated that birds will find sufficient food resources and resting places such that their abundance and use of the Refuge will not be measurably lessened, hunting pressure will not cause premature departure from the area, the physiological condition and production of waterfowl and other waterbirds will not be impaired, their behavior and normal activity patterns will not be altered dramatically, and their overall status will not be impaired. A program will be implemented to monitor waterfowl population numbers and habitat use.

Mandatory Re-Evaluation Date (provide month and year for “allowed” uses only):

Mandatory 15-year Re-Evaluation Date will be provided in the Final EIS/CCP (for priority public uses)

Mandatory 10-year Re-Evaluation (for all uses other than priority public uses)

NEPA Compliance for Refuge Use Decision (check one below):

Categorical Exclusion without Environmental Action Statement

Categorical Exclusion and Environmental Action Statement

Environmental Assessment and Finding of No Significant Impact

Environmental Impact Statement and Record of Decision

Refuge Determination

Prepared by: \_\_\_\_\_  
 (Signature) (Date)

Refuge Manager/  
 Project Leader

Approval: \_\_\_\_\_  
 (Signature) (Date)

Concurrence

Refuge Supervisor: \_\_\_\_\_  
 (Signature) (Date)

Regional Chief,  
 National Wildlife  
 Refuge System:

\_\_\_\_\_  
 (Signature) (Date)

## References

- Anderson, S. H. 1995. Recreational disturbance and wildlife populations. Pages 157-168 *in* R. L. Knight and K. J. Gutzwiller, ed. *Wildlife and Recreationists: coexistence through management and research*. Island Press, Washington, D. C. 372pp.
- Bartelt, G. A. 1987. Effects of disturbance and hunting on the behavior of Canada goose family groups in east central Wisconsin. *J. Wildl. Manage.* 51:517-522.
- Bauer, H. G., H. Stark, and P. Frenzel. 1992. Disturbance factors and their effects on water birds wintering in the western parts of Lake Constance. *Der Ornithologische Beobachter* 89:81-91.
- Cole, D. N. and R. L. Knight. 1990. Impacts of recreation on biodiversity in wilderness. Utah State University, Logan, Utah.
- Cronan, J. M. 1957. Food and feeding habits of the scaups in Connecticut waters. *Auk* 74(4):459-468.
- DeLong, A. 2002. Managing Visitor Use & Disturbance of Waterbirds. A Literature Review of Impacts and Mitigation Measures.
- Fox, A. D. and J. Madsen. 1997. Behavioral and distributional effects of hunting disturbance on waterbirds in Europe: implications for refuge design. *J. Appl. Ecol.* 34:1-13.
- Havera, S. P., L. R. Boens, M. M. Georgi, and R. T. Shealy. 1992. Human disturbance of waterfowl on Keokuk Pool, Mississippi River. *Wildl. Soc. Bull.* 20:290-298.
- Heitmeyer, M. E. and D. G. Raveling. 1988. Winter resource use by three species of dabbling ducks in California. Dept. Wildlife and Fisheries Biology, Univ. of Calif., Davis. Final Report to Delta Waterfowl and Wetlands Research Center, Portage La Prairie, Manitoba, Canada. 200pp.
- Jahn, L. R. and R. A. Hunt. 1964. Duck and coot ecology and management in Wisconsin. Wisconsin Conserv. Dep. Tech. Bull. No. 33. 212pp.
- Knight, R. L. and D. N. Cole. 1995. Wildlife responses to recreationists. *in* *Wildlife and Recreationists* (R. L. Knight and K. J. Gutzwiller, eds.) Island Press, Covelo, California.
- Korschgen, C. E., L. S. George, and W. L. Green. 1985. Disturbance of diving ducks by boaters on a migrational staging area. *Wildl. Soc. Bull.* 13:290-296.
- Madsen, J. 1985. Impact of disturbance on field utilization of pink-footed geese in West Jutland, Denmark. *Biol. Conserv.* 33 :53-63.
- Madsen, J. 1995. Impacts of disturbance on migratory waterfowl. *Ibis* 137:S67-S74.
- Morton, J. M., A. C. Fowler, and R. L. Kirkpatrick. 1989a. Time and energy budgets of American black ducks in winter. *J. Wildl. Manage.* 53(2):401-410 .
- Morton, J. M., R. L. Kirkpatrick, M. R. Vaughan, and D. F. Stauffer. 1989b. Habitat use and movements of American black ducks in winter. *J. Wildl. Manage.* 53:390-400.
- Owens, N. W. 1977. Responses of wintering brant geese to human disturbance. *Wildfowl* 28:5-14.
- Paulus, S.L. 1984. Activity budgets of nonbreeding gadwalls in Louisiana. *J. Wildl. Manage.* 48:371-380.

- Raveling, D. G. 1979. The annual cycle of body composition of Canada geese with special reference to control of reproduction. *Auk* 96:234-252.
- Thomas, V. G. 1983. Spring migration: the prelude to goose reproduction and a review of its implication. *In* Fourth Western Hemispheric Waterfowl and Waterbird Symposium, ed., H. Boyd. 73-81. Ottawa, Canada: Canadian Wildlife Service.
- Tjarnlund, U., G. Ericson, E. Lindesjoo, I. Petterson, and L. Balk. 1993. Investigation of the biological effects of 2-cycle outboard engines' exhaust on fish. Institute of Applied Research, University of Stockholm.
- White-Robinson, R. 1982. Inland and salt marsh feeding of wintering brent geese in Essex. *Wildfowl* 33:113-118.
- Wolder, M. 1993. Disturbance of wintering northern pintails at Sacramento National Wildlife Refuge, California. M. S. Thesis, Humboldt State Univ., Arcata. 62pp.
- Wood, A. K. 1993. Parallels between old-growth forest and wildlife population management. *Wild. Soc. Bull* 21: 91-95.
- USFWS (U.S. Fish and Wildlife Service). 1986. Pacific Bald Eagle Recovery Plan. U.S. Fish and Wildlife Service. Portland, OR. 160 pp.
- USFWS. 2002. Nisqually National Wildlife Refuge Draft Comprehensive Conservation Plan and Environmental Impact Statement. U.S. Fish and Wildlife Service, Region 1.
- WDFW (Washington Department of Fish and Wildlife). 2001. Priority species and habitats list. Available at: <http://www.wa.gov/wdfw/hab/phsvert.htm#birds>.

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## COMPATIBILITY DETERMINATION

*(August 2004)*

**Use:** Environmental Education

**Refuge Name:** Nisqually National Wildlife Refuge, located in Thurston and Pierce counties, Washington.

**Establishing and Acquisition Authorities:** Nisqually National Wildlife Refuge (NWR) was established on January 22, 1974 with approval by the Migratory Bird Conservation Commission. Approximately 2,925 acres of the approved 3,936 acres have been acquired. Legal authorities used for establishment of the Refuge include: Migratory Bird Conservation Act, as amended (16 U.S.C. 715-715d, 715e, 715f - 715r); and Fish and Wildlife Act of 1956, as amended (16 U.S.C. 742a - 742j).

**Refuge Purposes:** Nisqually NWR purposes include:

...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds (16 U.S.C.-715d).

...for the development, advancement, management, conservation, and protection of fish and wildlife resources ...(16 U.S.C. 742f(a)(4).

... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ...16 U.S.C. 742f(b)(1).

**National Wildlife Refuge System Mission:** “To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd et seq.]).

**Description of Use:** Currently, the environmental education program at Nisqually NWR serves 5,000 students a year. The environmental education program is designed to provide effective resources, tools, and training which facilitates the teaching of accurate scientific and environmental information about the Nisqually River watershed, Delta, and surrounding areas. The environmental education program works with students and educators to foster an understanding of and appreciation for resource management, the human impacts on wildlife habitats, and to encourage active participation in resource protection.

With a full-time environmental education staff, up to 15,000 students a year will participate in the Refuge environmental education program. Educators will attend a teacher orientation and will design, schedule, and run their own field trips on the Refuge. Refuge staff will provide teacher training, site-specific curricula, materials, and activities, and field trip assistance to enhance learning in an outdoor setting. The temporary Education Center, or new education facility, will be the focus area of the education program. Environmental education study sites in the area of the Twin Barns Loop Trail will provide areas for more in-depth study. Students and

teachers will participate in restoration and monitoring activities through one-time activities or more long-term monitoring studies.

**Uses within the Proposed Expansion Area:** Chapters 2 and 3 of the Final CCP/EIS for Nisqually NWR identify areas in which the Service would seek to acquire land from willing sellers outside of the current Refuge boundary (USFWS 2002). The Refuge would acquire from or develop a cooperative management agreement with WDFW to cooperatively manage the Luhr Beach area and Nisqually Reach Nature Center. Because of similar objectives, the education program at the Nisqually Reach Nature Center would be incorporated into the Refuge environmental education program through a cooperative agreement, providing an even stronger program for educating the public on the marine resources of the Nisqually Delta.

As property is acquired south of I-5 and on the East Bluff, each parcel will be reviewed to determine whether it may be incorporated into the existing Refuge environmental education program. The Refuge environmental education program will continue to focus within the Environmental Education Center and Twin Barns Loop Trail areas. However, future environmental education opportunities on newly acquired lands will include student and teacher participation in habitat restoration and monitoring activities that would be incorporated into the overall program. This compatibility determination will be re-evaluated if new activities in the expansion area are anticipated to significantly change the level of use.

**Availability of Resources:** The following funding/annual costs would be required to administer and manage environmental education activities as described above:

	<b>One-Time Cost</b>	<b>Recurring Cost</b>
Construct and Outfit Education Center	1,300K	
Establish Study Sites	45K	
Maintenance and operation of Education Center, Maintenance of study sites		35K
Staffing (teacher training, student support, curriculum development, administration)		150K
Equipment, materials, and supplies	<u>100K</u>	<u>15K</u>
<b>TOTAL</b>	<b>\$1,445K</b>	<b>\$200K</b>

Funds are anticipated to be available through the Service budget process for construction of a new education center, establishment of study sites, and potentially some operational costs. Additional funding for staffing and operational costs would be needed. Other sources will be sought through strengthened partnerships, grants, and additional Refuge operations funding to support a safe, quality environmental education program as described above.

**Anticipated Impacts of Use:** The environmental education program would use existing public facilities including parking areas, the Visitor Center, trails, observation platforms and overlooks, and the temporary Education Center. Direct impact to wildlife would occur, as with any group along the trail, if birds (mostly songbirds and waterfowl) near the trail are disturbed. This disturbance is considered to be of minimal impact because: (1) the total number of students permitted through the reservation system is limited to 100 per day; (2) students and teachers will

be instructed in trail etiquette and the best ways to view wildlife with minimal disturbance; (3) education groups will be required to have a sufficient number of adults to supervise the group; (4) trail design will provide adequate cover for wildlife; and (5) observation areas and scopes are provided to view wildlife at a distance which reduces disturbance.

Establishment of environmental education study sites would create some off-trail disturbance of habitat. Again, this disturbance is considered minimal as study sites will be placed in areas already impacted by trail users and Refuge staff, and all off-trail activity will be focused in these small areas. Educators will be instructed on use of the study areas during teacher orientation workshops. Collection of samples for study (i.e., mud, water, plants) will be restricted to study areas, and samples must be used on site. Collection will be of materials needed to enhance hands-on learning and investigation and will be designed as part of structured activities and lessons, guided by teachers, and monitored by Refuge staff. These activities are an integral part of the education program design and philosophy and their impacts are considered minimal.

Education staff will coordinate with Biology staff regarding activities associated with restoration or monitoring projects to ensure that impacts to both wildlife and habitat are minimal. As with any restoration and monitoring activities conducted by Refuge personnel, these activities conducted by students would be at a time and place where the least amount of disturbance would occur.

**Anticipated Impacts of Uses within the Proposed Expansion Area:** Similar to the management of uses on existing lands, the following conditions must be met before allowing existing uses to occur on an interim basis on newly acquired lands: (1) There is no indirect, direct, or cumulative threat anticipated to human health or safety; (2) There is no indirect, direct, or cumulative threat anticipated to natural or cultural resources; (3) The use is consistent with management of existing Nisqually NWR lands and would contribute to achieving Refuge goals. In particular, existing Refuge regulations would not be compromised; (4) The newly acquired lands represent a meaningful unit within which to manage the activity; and (5) There are no anticipated conflicts with priority public uses.

Future environmental education opportunities in the expansion area associated with habitat restoration and monitoring will have similar impacts as described above.

**Public Review and Comment:** Public review and comments were solicited in conjunction with the Draft CCP/EIS for Nisqually NWR, released in December 2002. Few comments were received on the Compatibility Determinations. Also see the Summary of Changes document and Appendix M (Comments and Responses). No changes were necessary based on comments received.

**Determination:**

Use is Not Compatible

Use is Compatible with the Following Stipulations

**Stipulations necessary to ensure compatibility:** Participants in the Refuge's environmental education program will be restricted to established trails, study sites, and other facilities including buildings, boardwalks, photo blinds, observation decks, and platforms. Existing and

new trails and facilities would be designed, constructed, and operated to provide adequate sanctuary for wildlife populations.

All groups using the Refuge for environmental education will be required to make reservations in advance through the Refuge office. A daily limit of 100 students participating in the education program will be maintained through this reservation system. Efforts will be made to spread out use by large groups while reservations are made, reducing disturbance to wildlife and over-crowding of Refuge facilities during times of peak demand.

Environmental education study sites will be located where minimal impact to Refuge resources will occur. Boardwalks, railings, or platforms will be used as appropriate to minimize disturbance by eliminating repeated foot traffic directly in the habitat. Periodic monitoring and evaluation of sites and programs will be conducted to assess if objectives are being met and the resource is not being degraded.

Trail etiquette and ways to reduce wildlife disturbance will be discussed with teachers during orientation workshops and with students upon arrival during their welcome session. Observation platforms and scopes will be provided to view wildlife at a distance, which will reduce disturbance.

Students participating in restoration and monitoring activities will work as described in the program and as permitted in their reservation form. Students will be trained by Refuge staff before they start restoration and monitoring projects to ensure their safety while out in the field and to minimize wildlife and habitat disturbance. Periodic monitoring and evaluation of activities will be conducted to assess if objectives are being met.

**Justification:** Environmental education is a priority public use of the National Wildlife Refuge System. Providing a quality environmental education program is a Refuge goal. To achieve this goal, the Refuge environmental education program would provide a diversity of environmental education opportunities to students and teachers. These include: (1) facilities, materials, and training; (2) access to a variety of Refuge habitats; and (3) the ability to observe wildlife and conduct hands-on exploration. The program is intended to foster a better understanding of Refuge ecosystems and wildlife resources, and in turn build a public that is more knowledgeable about and involved in natural resource stewardship. Although there is some impact to Refuge lands and wildlife in having an environmental education program, efforts will be made to ensure that they are minimal. The benefits of an environmental education program to resource management well into the future far outweigh the short-term impacts described above.

Mandatory Re-Evaluation Date (provide month and year for “allowed” uses only):

Mandatory 15-year Re-Evaluation Date, will be provided in Final EIS/CCP (for priority public uses)

Mandatory 10-year Re-Evaluation (for all uses other than priority public uses)

NEPA Compliance for Refuge Use Decision (check one below):

\_\_\_\_\_ Categorical Exclusion without Environmental Action Statement

\_\_\_\_\_ Categorical Exclusion and Environmental Action Statement

\_\_\_\_\_ Environmental Assessment and Finding of No Significant Impact

X  Environmental Impact Statement and Record of Decision

Refuge Determination

Prepared by:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

Refuge Manager/  
Project Leader

Approval:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

Concurrence

Refuge Supervisor:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

Regional Chief,  
National Wildlife

Refuge System:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

## References

USFWS (U.S. Fish and Wildlife Service). 2002. Nisqually National Wildlife Refuge Draft Comprehensive Conservation Plan and Environmental Impact Statement. U.S. Fish and Wildlife Service, Region 1.

## COMPATIBILITY DETERMINATION

*(August 2004)*

**Use:** Wildlife Observation, Photography, and Interpretation

**Refuge Name:** Nisqually National Wildlife Refuge, located in Thurston and Pierce counties, Washington.

**Establishing and Acquisition Authorities:** Nisqually National Wildlife Refuge (NWR) was established on January 22, 1974 with approval by the Migratory Bird Conservation Commission. Approximately 2,925 acres of the approved 3,936 acres have been acquired. Legal authorities used for establishment of the Refuge include: Migratory Bird Conservation Act, as amended (16 U.S.C. 715-715d, 715e, 715f - 715r); and Fish and Wildlife Act of 1956, as amended (16 U.S.C. 742a - 742j).

**Refuge Purposes:** Nisqually NWR purposes include:

...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds (16 U.S.C.-715d).

...for the development, advancement, management, conservation, and protection of fish and wildlife resources ...(16 U.S.C. 742f(a)(4).

... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ...16 U.S.C. 742f(b)(1).

**National Wildlife Refuge System Mission:** “To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd et seq.]).

**Description of Use:** Wildlife observation, photography, and interpretation are considered together in this Compatibility Determination because all are considered to be wildlife-dependent, non-consumptive uses and many elements of these programs are similar. Currently, over 95,500 visitors per year participate in these Refuge programs. The Refuge will continue to provide public facilities, including a Visitor Center with interpretive displays, focusing on Refuge habitats and wildlife. Interpretive panels will also be located along Refuge trails. Interpretation would focus on Refuge habitats, estuarine restoration, improved management, and fish and wildlife. All three of these public uses are dependent upon the Refuge trail system. Below is a description of Refuge trails:

1. An existing accessible 1-mile loop boardwalk trail will be maintained. This self-guided trail surrounds permanent and seasonal wetlands and riparian habitat and has 5 wildlife observation overlooks, a viewing platform, interpretive panels, and permanently mounted scopes and binoculars.
2. There would be a 1½-mile trail on a new exterior dike and boardwalk extension that would be linked with the existing Twin Barns Loop Trail, providing a 3½-mile round-trip walk. This trail would take visitors out past freshwater wetland and riparian restoration

- areas into the native estuarine and restoration area with a view of Puget Sound.
3. An unimproved, primitive ½-mile trail would be established in the Nisqually River surge plain forest, providing access farther into one of Washington’s diminishing habitats than the current trail.
  4. A new loop trail (2.5-mile) would be developed on tribal and Refuge lands east of the Nisqually River (Eastside). This trail will lead visitors through pastures, freshwater wetland or riparian restoration areas, and existing and restored estuarine areas. Seasonal closures during the waterfowl hunting season would be required because of activities from a private hunt club. A new visitor contact station and parking area would be constructed to support this trail.
  5. Another new trail would include a trail on the East Bluff in an upland coniferous dominated forest. This trail would be elevated and could provide some viewpoints to overlook the delta. Development of this trail would occur after acquisition of the East Bluff parcel has been completed.

**Uses within the Proposed Expansion Area:** Chapters 2 and 3 of the Final CCP/EIS for Nisqually NWR identify areas in which the Service would seek to acquire land from willing sellers outside of the current Refuge boundary (USFWS 2002). Current levels of wildlife-dependent public use are minimal. The Nisqually Reach Nature Center provides the only public access for wildlife observation, interpretation, and photography. However, this facility does not include a trail system. The Refuge would acquire from or develop a cooperative management agreement with WDFW to cooperatively manage the Luhr Beach Boat Ramp and Nisqually Reach Nature Center to improve the interpretation of Refuge resources from this access point. As property is acquired south of I-5 and on the East Bluff, each parcel will be reviewed to determine whether public access trails or viewing areas could be established. Criteria that will be used for determining the development of new trails include the availability of wildlife sanctuary in the immediate area.

**Availability of Resources:** The following funding/annual costs would be required to administer and manage wildlife observation, photography, and interpretation activities as described above:

	<b>One-Time Cost</b>	<b>Recurring Cost</b>
Maintenance and operation of Visitor Center, including staff, support materials (brochures), and special events		350K
Construct east side visitor facilities	120K	15K
Construct east side trail with interpretive panels	125K	
Maintenance of new Visitor Contact Station(s), parking area (s), and trails		75K
Law enforcement		45K
Signs/Interpretive panels		15K
Administration	_____	<u>30K</u>
<b>TOTAL</b>	<b>\$245K</b>	<b>\$530K</b>

Additional funds would be required to construct, operate, and maintain visitor facilities and interpretive materials. Law enforcement staffing would also be needed. Funding would be sought through the Service budget process. Other sources will be sought through strengthened partnerships, grants, and additional Refuge operations funding to support a safe, quality public use program as described above.

### **Anticipated Impacts of Use:**

*Wildlife Observation and Interpretation:* The construction and maintenance of trails and boardwalks will impact soils, vegetation, and in some instances hydrology around the trails. This could include an increased potential for erosion, soil compaction (Liddle 1975), reduced seed emergence (Cole and Landres 1995), alteration of vegetative structure and composition, and sediment loading (Cole and Marion 1988).

Human activities on trails can result in direct effects on wildlife through harassment, a form of disturbance that can cause physiological effects, behavioral modifications, or death (Smith and Hunt 1995). Birds can be impacted from human activities on trails when they are disturbed and flushed from feeding, resting, or nesting areas. Flushing, especially repetitive flushing, can strongly impact habitat use patterns of many birds species. Flushing from an area can cause birds to expend more energy, be deterred from using desirable habitat, affect resting or feeding patterns, increase exposure to predation or cause birds to abandon sites with repeated disturbance (Smith and Hunt 1995). For example, flocks of geese and ducks are repeatedly flushed by pedestrians on dike trails leading to McAllister Creek during fall and winter months. Migratory birds are observed to be more sensitive than resident species to disturbance (Klein 1989). Herons and shorebirds were observed to be the most easily disturbed (when compared to gulls, terns and ducks) by human activity and flush to distant areas away from people (Burger 1981). A reduced number of shorebirds were found near people who were walking or jogging, and about 50% of flushed birds flew elsewhere (Burger 1981). In addition, the foraging time of sanderlings decreased and avoidance (e.g., running, flushing) increased as the number of humans within 100 meters increased at a coastal bay refuge on the Atlantic (Burger and Gochfeld 1991). Nest predation for songbirds (Miller et al. 1998), raptors (Glinski 1976), colonial nesting species (Buckley and Buckley 1978), and waterfowl (Boyle and Samson 1985) tends to increase in areas more frequently visited by people. In addition, for many passerine species, primary song occurrence and consistency can be impacted by a single visitor (Gutzwiller et al. 1994). This could potentially limit the number of breeding pairs of certain passerine species, thus limiting production within refuge riparian habitats (Reijnen and Foppen 1994).

*Wildlife Photography:* Of the wildlife observation techniques, wildlife photographers tend to have the largest disturbance impacts (Klein 1993, Morton 1995, Dobb 1998). While wildlife observers frequently stop to view species, wildlife photographers are more likely to approach wildlife (Klein 1993). Even slow approach by wildlife photographers tends to have behavioral consequences to wildlife species (Klein 1993). Other impacts include the potential for photographers to remain close to wildlife for extended periods of time, in an attempt to habituate the wildlife subject to their presence (Dobb 1998) and the tendency of casual photographers, with low-power lenses, to get much closer to their subjects than other activities would require (Morton 1995), including wandering off trails. This usually results in increased disturbance to wildlife and habitat, including trampling of plants.

**Anticipated Impacts of Uses within the Proposed Expansion Area:** The following conditions must be met before allowing existing uses to occur on an interim basis on newly acquired lands: (1) There is no indirect, direct, or cumulative threat anticipated to human health or safety; (2) There is no indirect, direct, or cumulative threat anticipated to natural or cultural resources; (3) The use is consistent with management of existing Nisqually NWR lands and would contribute to achieving Refuge goals. In particular, existing Refuge regulations would not be compromised; (4) The newly acquired lands represent a meaningful unit within which to manage the activity; and (5) There are no anticipated conflicts with priority public uses.

Future wildlife observation, interpretation, and photography opportunities in the expansion area will have similar impacts would as described above.

**Public Review and Comment:** Public review and comments were solicited in conjunction with the Draft CCP/EIS for Nisqually NWR, released in December 2002. Few comments were received on the Compatibility Determinations. Also see the Summary of Changes document and Appendix M (Comments and Responses). No changes were necessary based on comments received.

**Determination:**

Use is Not Compatible

Use is Compatible with the Following Stipulations

**Stipulations necessary to ensure compatibility:** Adequate areas would be designated as wildlife sanctuary with no public use activities to provide high quality habitat for feeding, resting, and thermal protection. Trails will be designed to provide adequate sanctuary areas with minimal fragmentation of habitats. For example, the RNA (764 acres) provides sanctuary because no trails would be developed in this area and seasonal closures and a prohibition on consumptive uses will be enforced. In addition, the restored estuarine area (699 acres) will be closed to all public uses, except for monitoring and research studies. There would be no loop trail in the restored estuarine area because activity in the middle of the restored estuary would be disturbing to wildlife species that use that habitat. In addition, only a short section of boardwalk would remain near McAllister Creek, eliminating much of the current trail activity within this narrow and sensitive area. There would also be no cross trails that would lead visitors into the interior of freshwater habitats to minimize disturbance and maximize bird use in these smaller areas. Where feasible, native trees and shrubs will be planted to create screening along trails to reduce disturbance. These measures will also enhance viewing opportunities and provide quality wildlife observation experiences.

All of the above described uses will be restricted to designated trails and public facilities. Elevated boardwalks with the pin foundation system (no pilings in the ground) will be used in sensitive habitats to reduce effects on soils, vegetation, and hydrology. Observation areas and scopes will be provided to allow visitors to view wildlife at a distance with less or with minimal disturbance. The design of new trails will follow the criteria described above. Any proposed trail developments will only occur after adequate wildlife sanctuary areas have been identified. Visitors will not be allowed into off-trail sanctuary areas unless given permission through the

Refuge's Special Use Permitting system for special circumstances. Refuge staff will enforce Refuge regulations prohibiting unauthorized off-trail activities.

Public use on the Refuge will be restricted to daylight hours only. The capacity of the Refuge will be limited to the 100-car capacity parking lot. When the lot is full, the Refuge trails and facilities will be considered to be full. Regulations and wildlife friendly behavior will be described in brochures and posted at the Visitor Center and Visitor Contact Station(s).

Monitoring protocol would be developed to examine impacts associated with differing levels and types of public use. Monitoring data will be critically analyzed and used by the Refuge Manager to develop future modifications if necessary to ensure compatibility of the wildlife observation, photography, and interpretation programs.

**Justification:** These wildlife-dependent uses are priority public uses of the National Wildlife Refuge System. Providing opportunities for wildlife observation, photography, and environmental interpretation would contribute toward fulfilling provisions of the National Wildlife Refuge System Administration Act, as amended in 1997, and one of the goals of Nisqually NWR. Wildlife observation, photography, and interpretation would provide an excellent forum for allowing public access and increasing understanding of Refuge resources. The educational possibilities provided by these opportunities would outweigh anticipated impacts associated with implementation of the program. The stipulations outlined above should minimize potential impacts relative to wildlife/human interactions.

Mandatory Re-Evaluation Date (provide month and year for "allowed" uses only):

Mandatory 15-year Re-Evaluation, Date will be provided in Final EIS/CCP (for priority public uses)

Mandatory 10-year Re-Evaluation (for all uses other than priority public uses)

NEPA Compliance for Refuge Use Decision (check one below):

Categorical Exclusion without Environmental Action Statement

Categorical Exclusion and Environmental Action Statement

Environmental Assessment and Finding of No Significant Impact

Environmental Impact Statement and Record of Decision

Refuge Determination

Prepared by: \_\_\_\_\_ (Signature) \_\_\_\_\_ (Date)  
Refuge Manager/  
Project Leader  
Approval: \_\_\_\_\_ (Signature) \_\_\_\_\_ (Date)

Concurrence

Refuge Supervisor: \_\_\_\_\_ (Signature) \_\_\_\_\_ (Date)  
Regional Chief,  
National Wildlife  
Refuge System: \_\_\_\_\_ (Signature) \_\_\_\_\_ (Date)

## References

- Boyle, S. A. and F. B. Samson. 1985. Effects of nonconsumptive recreation on wildlife: a review. *Wildl. Soc. Bull.* 13:110-116.
- Buckley, P. A. and F. G. Buckley. 1976. Guidelines for protection and management of colonially nesting waterbirds. North Atlantic Regional Office, National Park Service, Boston, MA. 52pp.
- Burger, J. 1981. The effect of human activity on birds at a coastal bay. *Biol. Cons.* 21:231-241.
- Burger, J. and M. Gochfeld. 1991. Human distance and birds: tolerance and response distances of resident and migrant species in India. *Environ. Conserv.* 18:158-165.
- Cole, D. N. and P. B. Landres. 1995. Indirect effects of recreation on wildlife. Pages 183-201 in R. L. Knight and K. J. Gutzwiller, ed. *Wildlife and Recreationists: coexistence through management and research* Island Press, Washington, D. C. 372pp.
- Cole, D. N. and J. L. Marion. 1988. Recreation impacts in some riparian forests of the eastern United States. *Env. Manage.* 12:99-107.
- Dobb, E. 1998. Reality check: the debate behind the lens. *Audubon*: Jan.-Feb.
- Glinski, R. L. 1976. Birdwatching etiquette: the need for a developing philosophy. *Am. Bird* 30(3):655-657.
- Gutzwiller, K. J., R. T. Wiedenmann, K. L. Clements, and S. H. Anderson. 1994. Effects on human intrusion on song occurrence and singing consistency in subalpine birds. *Auk* 111:28-37.
- Klein, M. 1989. Effects of high levels of human visitation on foraging waterbirds at J. N. "Ding" Darling National Wildlife Refuge, Sanibel Florida. Masters thesis. Gainesville, Florida: University of Florida.
- Klein, M. L. 1993. Waterbird behavioral responses to human disturbances. *Wildl. Soc. Bull.* 21:31-39.
- Liddle, M. J. 1975. A selective review of the ecological effects on human trampling on natural ecosystems. *Biol. Conserv.* 7:17-36.
- Miller, S. G., R. L. Knight, and C. K. Miller. 1998. Influence of recreational trails on breeding bird communities. *Ecol. Appl.* 8:162-169.
- Morton, J. M. 1995. Management of human disturbance and its effects on waterfowl. Pages F59-F86 in W. R. Whitman, T. Strange, L. Widjeskog, R. Whittmore, P. Kehoe, and L. Roberts (eds.). *Waterfowl habitat restoration, enhancement and management in the Atlantic Flyway*. Third Ed. Environmental Manage. Comm., Atlantic Flyway Council Techn. Sect., and Delaware Div. Fish and Wildl., Dover, DE. 1114pp.
- Reijnen, R. and R. Foppen. 1994. The effects of car traffic on breeding bird populations in woodland. I. Evidence of reduced habitat quality for willow warbler (*Pyloscopus trochilus*) breeding close to a highway. *J. Appl. Ecol* 31: 85-94.
- Smith, L. and J. D. Hunt. 1995. Nature tourism: impacts and management. Pp. 203-219 in Knight, R. L.; Gutzwiller, K. J. (*Wildlife and recreationists: coexistence through management and research*, eds.). Island Press, Washington, D. C.
- USFWS. 2002. Nisqually National Wildlife Refuge Draft Comprehensive Conservation Plan and Environmental Impact Statement. U.S. Fish and Wildlife Service, Region 1.

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## COMPATIBILITY DETERMINATION

*(August 2004)*

**Use:** Research

**Refuge Name:** Nisqually National Wildlife Refuge, located in Thurston and Pierce counties, Washington.

**Establishing and Acquisition Authorities:** Nisqually National Wildlife Refuge (NWR) was established on January 22, 1974 with approval by the Migratory Bird Conservation Commission. Approximately 2,925 acres of the approved 3,936 acres have been acquired. Legal authorities used for establishment of the Refuge include: Migratory Bird Conservation Act, as amended (16 U.S.C. 715-715d, 715e, 715f - 715r); and Fish and Wildlife Act of 1956, as amended (16 U.S.C. 742a - 742j).

**Refuge Purposes:** Nisqually NWR purposes include:

...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds (16 U.S.C.-715d).

...for the development, advancement, management, conservation, and protection of fish and wildlife resources ...(16 U.S.C. 742f(a)(4).

... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ...16 U.S.C. 742f(b)(1).

**National Wildlife Refuge System Mission:** “To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd et seq.]).

**Description of Use:** Nisqually NWR receives 1-4 requests per year to conduct scientific research on the Refuge. Priority would be given to studies that contribute to the enhancement, protection, preservation, and management of native Refuge plant and wildlife populations and their habitats. Research applicants must submit a proposal that would outline: (1) objectives of the study; (2) justification for the study; (3) detailed methodology and schedule; (4) potential impacts on Refuge wildlife or habitat, including disturbance (short and long term), injury, or mortality. This includes a description of measures the researcher will take to reduce disturbance or impacts; (5) personnel required; (6) costs to Refuge, if any; and (7) progress reports and end products (i.e., reports, publications). Research proposals would be reviewed by Refuge staff and others, as appropriate, and Special Use Permits will be issued if approved.

Evaluation criteria will include, but not be limited to, the following:

- 1) Research that will contribute to specific Refuge management issues will be given higher priority over other requests.

- 2) Research that will conflict with other ongoing research, monitoring, or management programs will not be granted.
- 3) Research projects that can be done off-Refuge are less likely to be approved.
- 4) Research which causes undue disturbance or is intrusive will likely not be granted. Level and type of disturbance will be carefully weighed when evaluating a request.
- 5) Research evaluation will determine if any effort has been made to minimize disturbance through study design, including considering adjusting location, timing, scope, number of permittees, study methods, number of study sites, etc.
- 6) If staffing or logistics make it impossible for the Refuge to monitor researcher activity in a sensitive area, this may be reason to deny the request, depending on the specific circumstances.
- 7) The length of the project will be considered and agreed upon before approval. Projects will be reviewed annually.

**Uses within the Proposed Expansion Area:** Chapters 2 and 3 of the Final CCP/EIS for the Nisqually NWR identify areas in which the Service would seek to acquire land from willing sellers outside of the current Refuge boundary (USFWS 2002). If property is acquired that includes areas of research interest, the same Special Use Permit process and evaluation criteria as described above will be followed.

**Availability of Resources:** The following funding/annual costs would be required to administer and manage research activities as described above:

	<b>Recurring Costs</b>
Administration (Evaluation of applications, management of permits, and oversight of research projects)	12K  _____
<b>TOTAL</b>	<b>\$12K</b>

Refuge operational funds are currently available through the Service budget process to administer this program.

**Anticipated Impacts of Use:** Some level of disturbance is expected with all research activities since most researchers will be entering areas that are normally closed to the public, including going off designated trails, and may be collecting samples or handling wildlife. However, minimal impact to Refuge wildlife and habitats will be expected with research studies because Special Use Permit conditions will include conditions to ensure that impact to wildlife and habitats are kept to a minimum (see discussion above).

**Anticipated Impacts of Uses within the Proposed Expansion Area:** The following conditions must be met before allowing existing uses to occur on an interim basis on newly acquired lands: (1) There is no indirect, direct, or cumulative threat anticipated to human health or safety; (2) There is no indirect, direct, or cumulative threat anticipated to natural or cultural resources; (3) The use is consistent with management of existing Nisqually NWR lands and would contribute to achieving Refuge goals. In particular, existing Refuge regulations would not be compromised; (4) The newly acquired lands represent a meaningful unit within which to manage the activity; and (5) There are no anticipated conflicts with priority public uses.

If researchers are granted Special Use Permits to conduct research in the expansion area, anticipated impacts would be similar to that described above.

**Public Review and Comment:** Public review and comments were solicited in conjunction with the Draft CCP/EIS for Nisqually NWR, released in December 2002. Few comments were received on the Compatibility Determinations. Also see the Summary of Changes document and Appendix M (Comments and Responses). No changes were necessary based on comments received.

**Determination:**

Use is Not Compatible

Use is Compatible with the Following Stipulations

**Stipulations necessary to ensure compatibility:** Extremely sensitive wildlife habitat areas will be provided sufficient protection from disturbance by limiting proposed research activities in these areas. All Refuge rules and regulations must be followed unless otherwise excepted by Refuge management.

The criteria for evaluating a research proposal, outlined in the Description of Use section above, will be used when determining whether a proposed study will be approved on the Refuge. If proposed research methods are evaluated and determined to have potential impact on Refuge resources (habitat or wildlife), it must be demonstrated that the research is necessary for Refuge resource conservation management. Measures to minimize potential impacts would need to be developed and included as part of the study design. In addition, these measures will be listed as conditions on the Special Use Permit.

Refuge staff will monitor researcher activities for compliance with conditions on the Special Use Permit. At any time, Refuge staff may accompany the researchers to determine potential impacts. Staff may determine that previously approved research and special use permits be terminated due to observed impacts. The Refuge Manager will also have the ability to cancel a Special Use Permit if the researcher is out of compliance or to ensure wildlife or habitat protection.

**Justification:** This program as described is determined to be compatible. Potential impacts of research activities on Refuge resources will be minimized because sufficient restrictions would be included as part of the study design and researcher activities will be monitored by Refuge staff. Research projects will contribute to the enhancement, protection, preservation, and management of native Refuge wildlife populations and their habitats.

Mandatory Re-Evaluation Date (provide month and year for “allowed” uses only):

\_\_\_\_\_ Mandatory 15-year Re-Evaluation (for priority public uses)

X Mandatory 10-year Re-Evaluation, Date will be provided in Final EIS/CCP (for all uses other than priority public uses)

NEPA Compliance for Refuge Use Decision (check one below):

\_\_\_\_\_ Categorical Exclusion without Environmental Action Statement

\_\_\_\_\_ Categorical Exclusion and Environmental Action Statement

\_\_\_\_\_ Environmental Assessment and Finding of No Significant Impact

X Environmental Impact Statement and Record of Decision

Refuge Determination

Prepared by:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

Refuge Manager/  
Project Leader

Approval:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

Concurrence

Refuge Supervisor:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

Regional Chief,  
National Wildlife  
Refuge System:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

## References

USFWS. 2002. Nisqually National Wildlife Refuge Draft Comprehensive Conservation Plan and Environmental Impact Statement. U.S. Fish and Wildlife Service, Region 1.

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## COMPATIBILITY DETERMINATION

*(August 2004)*

**Use:** Agriculture - Haying

**Refuge Name:** Nisqually National Wildlife Refuge, located in Thurston and Pierce counties, Washington.

**Establishing and Acquisition Authorities:** Nisqually National Wildlife Refuge (NWR) was established on January 22, 1974 with approval by the Migratory Bird Conservation Commission. Approximately 2,925 acres of the approved 3,936 acres have been acquired. Legal authorities used for establishment of the Refuge include: Migratory Bird Conservation Act, as amended (16 U.S.C. 715-715d, 715e, 715f - 715r); and Fish and Wildlife Act of 1956, as amended (16 U.S.C. 742a - 742j).

**Refuge Purposes:** Nisqually NWR purposes include:

...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds (16 U.S.C.-715d).

...for the development, advancement, management, conservation, and protection of fish and wildlife resources ...(16 U.S.C. 742f(a)(4).

... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ...16 U.S.C. 742f(b)(1).

**National Wildlife Refuge System Mission:** “To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.” (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd et seq.]).

**Description of Use:** The existing haying program is conducted to provide browse for wintering waterfowl, particularly American wigeon and Canada geese. Approximately 250 acres of Refuge grasslands are hayed annually by a local farmer under a Special Use Permit. Haying operations are not allowed to begin until after July 1 so that most ground nesting birds can finish nesting. No pesticides or herbicides are associated with this use. Fertilizers may be added annually to some hay fields to provide nutrients for better grass production. A Cooperative Land Management Agreement will be developed and the cooperator will be required to provide service or materials to the Refuge that will enhance the habitat in exchange for the hay removed.

As a result of estuarine restoration and freshwater enhancement activities, the haying program will be greatly reduced as the proportion of freshwater wetlands within the diked area increases. By the completion of major restoration activities (2005), less than 100 acres of grasslands will be managed by the Service. These grasslands will be interspersed among permanent and seasonal freshwater wetlands. Once restoration is completed, haying on this reduced acreage may not be cost-effective for a cooperator. If there is a willing cooperator, the haying program will continue through a Cooperative Land Management Agreement, as described above. However, if no

cooperators are interested, the management of the remaining grasslands will become part of routine Refuge habitat management activities.

**Uses within the Proposed Expansion Area:** Chapters 2 and 3 of the Final CCP/EIS for the Nisqually NWR identify areas in which the Service would seek to acquire land from willing sellers outside of the current Refuge boundary (USFWS 2002). If property is acquired that include agricultural and grassland areas, each parcel will be reviewed to determine whether a haying program will be established. If established, the program will operate in the same manner as described above.

**Availability of Resources:** The following funding/annual costs would be required to administer and manage haying activities, as described above:

	<b>Recurring Costs</b>
Administration	<u>5K</u>
TOTAL	\$5K

Refuge operational funds are currently available through the Service budget process to administer this program.

**Anticipated Impacts of Use:** Anticipated impacts include: (1) short-term disturbance to wildlife caused by presence and activities of equipment and vehicles in fields; (2) detrimental effects of mowing on late ground-nesting birds (after July 1); (3) disturbance to soils or plants associated with mowing and fertilizing; (4) adverse impacts to species associated with dense native grasses, sedges, and rushes; (5) decline in natural biological diversity; and (6) potential introduction of invasive plant species from cooperator equipment. While some conflicts with natural biological diversity principles are evident, management of grasslands benefit wintering waterfowl and would occur in limited areas only. The resulting browse, when flooded in the fall and winter months, created by haying and mowing activities provides important food for wintering waterfowl that is not readily available in other areas during this time. The small acreage of grasslands will be managed as part of a mosaic of permanent and seasonal wetlands, grasslands, and shrub/scrub habitats to provide a diversity of habitats for a variety of migratory birds.

**Anticipated Impacts of Uses within the Proposed Expansion Area:** The following conditions must be met before allowing existing uses to occur on an interim basis on newly acquired lands: (1) There is no indirect, direct, or cumulative threat anticipated to human health or safety; (2) There is no indirect, direct, or cumulative threat anticipated to natural or cultural resources; (3) The use is consistent with management of existing Nisqually NWR lands and would contribute to achieving Refuge goals. In particular, existing Refuge regulations would not be compromised; (4) The newly acquired lands represent a meaningful unit within which to manage the activity; and (5) There are no anticipated conflicts with priority public uses.

If a haying program is implemented in the expansion area, anticipated impacts would be similar to that described above.

**Public Review and Comment:** Public review and comments were solicited in conjunction with the Draft CCP/EIS for Nisqually NWR, released in December 2002. Few comments were

received on the Compatibility Determinations. Also see the Summary of Changes document and Appendix M (Comments and Responses). No changes were necessary based on comments received.

**Determination:**

Use is Not Compatible

Use is Compatible with the Following Stipulations

**Stipulations necessary to ensure compatibility:** A Special Use Permit (SUP) will be issued to all cooperators associated with haying activities. All haying activities will be restricted to designated areas, limiting activity to these annually disturbed sites. Haying activities will start after July 1 each year, so that the majority of the ground-nesting birds have the opportunity to complete nesting, and be completed by November 1 to provide undisturbed winter and spring habitat for migratory waterfowl. Habitat needs in these areas will be reviewed annually to determine whether haying continues to be the appropriate management strategy for each site. Refuge staff will monitor activities of permittee or cooperator to ensure that special conditions required under the SUP or Cooperative Land Management Agreement are met.

**Justification:** Haying will provide feeding areas for migratory birds, primarily wintering waterfowl, a primary purpose for the establishment of this Refuge. Managing limited grassland areas as designated haying sites with a permittee or cooperator allows the Refuge to achieve specific habitat management objectives for these sites with minimal Service resources. These grasslands would be managed as part of a complex of freshwater wetlands and riparian areas, providing a more diverse mix of habitats for various migratory bird species. In addition, a haying program will complement Refuge reed canary grass control efforts at minimal cost to the Refuge.

Mandatory Re-Evaluation Date (provide month and year for “allowed” uses only):

Mandatory 15-year Re-Evaluation (for priority public uses)

Mandatory 10-year Re-Evaluation, Date will be provided in Final EIS/CCP (for all uses other than priority public uses)

NEPA Compliance for Refuge Use Decision (check one below):

Categorical Exclusion without Environmental Action Statement

Categorical Exclusion and Environmental Action Statement

Environmental Assessment and Finding of No Significant Impact

Environmental Impact Statement and Record of Decision

Refuge Determination

Prepared by: \_\_\_\_\_ (Signature) \_\_\_\_\_ (Date)

Refuge Manager/  
Project Leader

Approval: \_\_\_\_\_ (Signature) \_\_\_\_\_ (Date)

Concurrence

Refuge Supervisor: \_\_\_\_\_ (Signature) \_\_\_\_\_ (Date)

Regional Chief,  
National Wildlife

Refuge System: \_\_\_\_\_ (Signature) \_\_\_\_\_ (Date)

## References

USFWS (U.S. Fish and Wildlife Service). 2002. Nisqually National Wildlife Refuge Draft Comprehensive Conservation Plan and Environmental Impact Statement. U.S. Fish and Wildlife Service, Region 1.

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